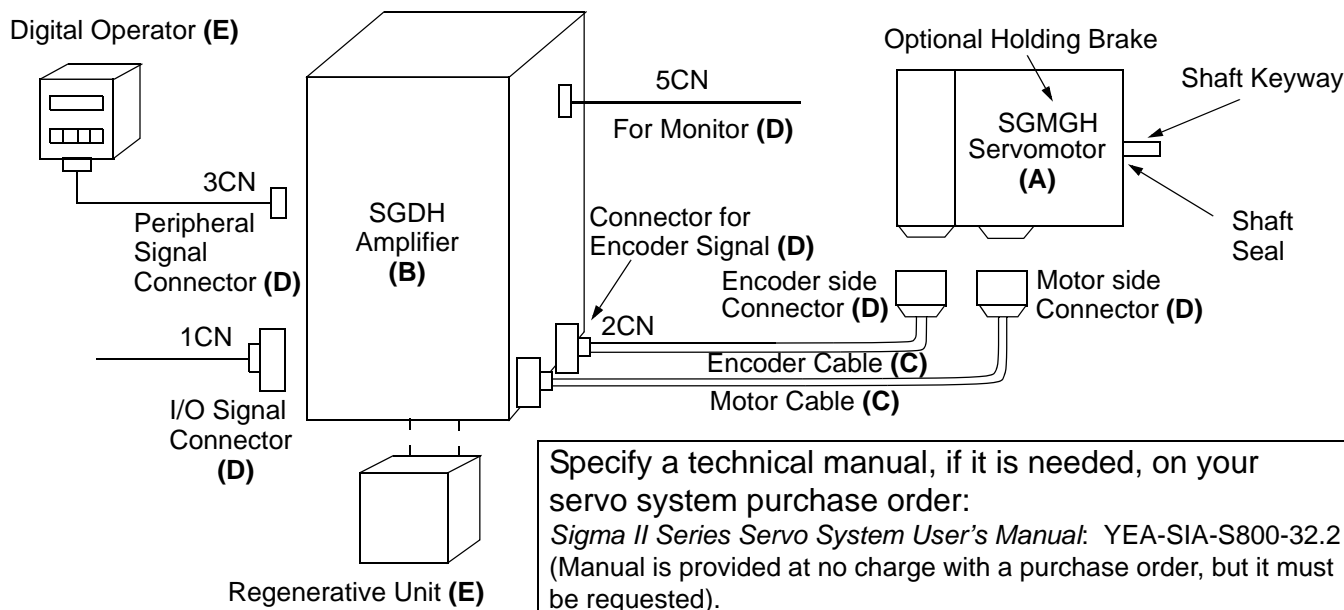


Selecting Your SGMGH Sigma II Servo System

First, select the Sigma II servomotor suited for your application using SigmaSize: the Yaskawa servomotor sizing software, available at no charge. (Request SigmaSize software via e-mail, at: literature@yaskawa.com).

Use the diagram below to locate and identify the components of your system. Each item is letter-coded and cross-referenced in the option tables on the following pages.

System Configuration



Model Number Designation

SGMGH - 09 A C A 6 [C]

Sigma Servomotor Type	Accessories
Rated Output	1: Standard
05: 500W (0.7hp)	C: 24V _{DC} Brake
09: 850W (1.14hp)	S: Shaft Seal
13: 1.3kW (1.7hp)	E: Brake and Shaft Seal
20: 2.0kW (2.7hp)	Shaft Specifications
30: 3.0kW (4.0hp)	6: Straight Shaft with Keyway
44: 4.4kW (6.0hp)	Rated Speed
55: 5.5kW (7.5hp)	A: 1500rpm
75: 7.5kW (10hp)	Encoder Specifications
1A: 11.0kW (15hp)	C: 17-Bit Incremental Encoder
1E: 15kW (20hp)	2: 17-Bit Absolute Encoder
Power Supply	
A: 200V	

200V Three-phase Sigma II Servo Systems

Servomotor & Amplifier Selection

SGMGH
Servomotors

Use the table below to select the appropriate SGMGH Sigma II servomotor and amplifier.
(Refer to the motor model # designation on the previous page specifying the available modification to motor construction/features.)

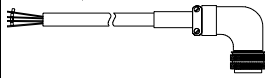
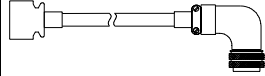
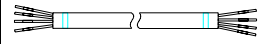
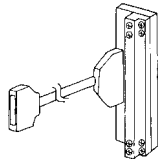
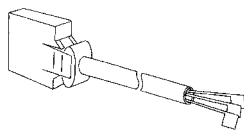
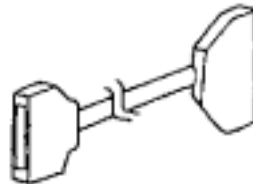
Description	Peak Torque (in • lb)	Rated Torque (in • lb)	Motor Inertia (in • lb • s ² x 10 ⁻³)	Motor MODEL # (A)	Amplifier MODEL # (B)* Analog/Digital Input SGDH-	Motor & Amplifier Item Class
200V Three-Phase 17-bit Incremental Encoder Straight Shaft with Keyway 3000rpm maximum** MS Connectors	79	25	6.41	SGMGH-05ACA61	05AE	Stock
			8.26	SGMGH-05ACA6C		
	122	48	12.30	SGMGH-09ACA61	10AE	
			14.15	SGMGH-09ACA6C		
	207	74	18.2	SGMGH-13ACA61	15AE	
			20.1	SGMGH-13ACA6C		
	254	102	28.1	SGMGH-20ACA61	20AE	
			35.9	SGMGH-20ACA6C		
	404	165	40.7	SGMGH-30ACA61	30AE	
			48.5	SGMGH-30ACA6C		
	630	252	59.8	SGMGH-44ACA61	50AE	
			67.6	SGMGH-44ACA6C		
	776	310	78.8	SGMGH-55ACA61	60AE Requires Regenerative Unit (E)	
			86.6	SGMGH-55ACA6C		
	1050	425	111	SGMGH-75ACA61	75AE Requires Regenerative Unit (E)	
			119	SGMGH-75ACA6C		
	1550	620	249	SGMGH-1AACA61	1AAE Requires Regenerative Unit (E)	Limited Stock
			267	SGMGH-1AACA6C		Non-stock
1988	845	279	SGMGH-1EACA61	1EAE Requires Regenerative Unit (E)	Limited Stock	
		309	SGMGH-1EACA6C		Non-stock	

Note: 24V_{DC} brakes for SGMGH Sigma II servomotors are standard. Contact a local source for 24V_{DC} power supplies.
For technical information, request request Yaskawa manual number YEA-SIA-S800-32.2.

**2000rpm maximum for 11 and 15kW systems only.

Pre-wired Cable Selection

Use the table below to select pre-wired cables for your SGMGH Sigma II servomotor.

Cable Description (C)		Motor Size (kW)	Part Number*		Comments	Item Class
			without Brake	with Brake		
Power Cable with Connectors (IP67)		0.5, 0.9, 1.3	B1E-□□(A)	B1BE-□□(A)	Use the following key to specify needed cable length (last two digits of the part number): 03: 3m 05: 5m 10: 10m (standard) 15: 15m 20: 20m	Stock***
		2.0, 3.0	B2E-□□(A)	B2BE-□□(A)		
		4.4	B3E-□□(A)	B3BE-□□(A)		
		5.5, 7.5**	B5E-□□(A)	B5E-□□(A) B7BCE-□□(A)		
		11, 15**	B6E-□□(A)	B6E-□□(A) B7BCE-□□(A)		
Encoder Cable (incremental or absolute) (IP67)		All	JZSP-CMP02-□□(B)		These cables are available in five lengths. Use two digits in the part number's last place: 03: 3m 05: 5m 10: 10m (standard) 15: 15m 20: 20m	
Encoder Cable (for applications up to 20m) for solder connections			FR-RMCT-SB		These cables are available in any length. For example, to order one FR-RMCT-SB cable, 16m long, specify: quantity: 16 part no.: FR-RMCT-SB	
Encoder Cable (for applications from >20 to <50m) for solder connections			UL20276-SB			
Input/Output 1CN Cable & Transition Terminal Block			JUSP-TA50P		35 mm DIN rail mountable; the cable length is 0.5m.	
Input/Output 1CN Cable with Pigtail Leads			JZSP-CKI01-□(A)		Use the following key to specify needed cable length (last digit of part number): 1: 1m (standard) 2: 2m 3: 3m	
Input/Output 1CN Cable Cable with Female D-Sub output Connector****		JZSP-CKI0D-□□		Use the following key to specify required cable length (last two digits of the part number): D50: 0.5m 01: 1m (standard) 02: 2m 03: 3m		

* "(A)" at the end of the cable number is the revision level. The revision level may be changed prior to this catalog's reprinting.

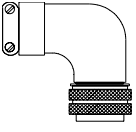
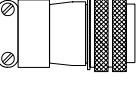

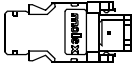
** When ordering these cables for motors with brakes, order the standard power cable and the additional cable for the brake.

*** Standard cable lengths are Stock items; non-standard cable lengths are Limited Stock items.

**** 50 Pin Female D-Sub output connector mates to customer supplied third party terminal block. (e.g., Wago #289-449, Weidmuller #919658, Phoenix #2283647, Amphenol/Sine #20-51039, and many others).

Connector Selection


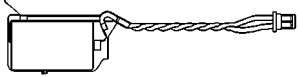
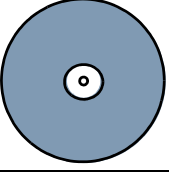
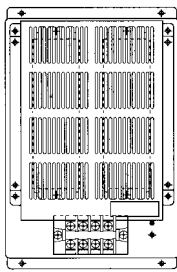
Use the table below to select mating connectors for each SGMGH Sigma II servomotor.

Connector Description (D)		Motor Size (kW)	Part Number		Comments	Item Class
			without Brake	with Brake		
MS Connector for Motor Power Cable*		0.5, 0.9, 1.3	MS3106B18-10S	MS3106B20-15S	Straight-type connector	Stock
			MS3108B18-10S	MS3108B20-15S	L-type connector	
			MS3057-10A	MS3057-12A	Cable clamp	
		2.0, 3.0, 4.4	MS3106B22-22S	MS3106B24-10S	Straight-type connector	
			MS3108B22-22S	MS3108B24-10S	L-type connector	
			MS3057-12A	MS3057-16A	Cable clamp	
		5.5, 7.5, 1A, 1E	MS3106B32-17S	MS3106B32-17S and MS3106A10SL-3S	Straight-type connector	
			MS3108B32-17S	MS3108B32-17S and MS3108A10SL-3S	L-type connector	
			MS3057-20A	MS3057-20A MS3057-4A	Cable clamp	
MS Connector for Encoder Cable (incremental or absolute encoder)		All	MS3106B20-29S		Straight-type connector	Stock
			MS3108B20-29S		L-type connector	
			MS3057-12A		Cable clamp	
1CN Mating Connector			JZSP-CKI9		—	
2CN Encoder Mating Connector			JZSP-CMP9-1		—	
3CN Peripheral Mating Connector	—		YSC-1		—	
5CN Connector and 1m Cable with Pig-tails	—		DE9404559		Can use 5CN for analog speed and torque monitor service checks.	

* Choose either a straight or L-type connector and the associated cable clamp for a complete assembly. For example, L-type connector MS3108B18-10S is compatible with cable clamp MS3057-10A. MS connectors listed in the table are non-environmental.

Peripheral Device Selection

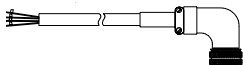
Use the table below to select peripheral devices for each SGMGH Sigma II servomotor.

Component (E)		Part Number	Description	Item Class
Hand-held Digital Operator Panel		JUSP-OP02A-1 and JZSP-CMS00-1	Portable unit with 1m adapter cable for Sigma II	Stock
Software Interface Cable	—	YS-12	Pre-wired 2.0m cable with 9-pin connector	
Absolute Encoder Battery		JZSP-BA01	3.6V, 1000mAh (Lithium Battery)	
		JZSP-BA01-1	For SGDH-60 and above (same as JZSP-BA01 with longer lead)	
SigmaWin+ Software		JZSP-WP0001	Minimum Recommended System Requirements Pentium 200 MHz, 64MB RAM, 200MB hard drive, CDROM Drive, RS-232 or RS-422 port, Screen resolution 800x600 w/ 256 colors, and Windows 95,98,NT4.0,2000,ME. (Windows XP planned)	
Regenerative Unit for 6.0kW amplifier (880W)		JUSP-RA04	These are general purpose regenerative units.*	
Regenerative Unit for 7.5, 11, and 15kW amplifiers (1760W)		JUSP-RA05	Order the Motion document: PI#99004 for setup instructions for this unit. Caution: Proper set-up is necessary to avoid equipment damage.	
DC Reactor (for suppressing harmonics in the power supply)	For 200V: SGDH-05AE SGDH-08AE SGDH-10AE	X5061	—	Limited Stock
	SGDH-15AE SGDH-20AE	X5060		
	SGDH-30AE SGDH-50AE	X5059 X5068		

* For an alternate solution, specify the individual resistor part number RH500N25_OHMK in necessary series or parallel connection. Refer to the *Sigma II Series Servo System User's Manual (YEA-SIA-S800-32.2)* for proper resistor sizing guidelines.

CE Pre-wired Cable Selection



Use the table below to select shielded pre-wired power cables for your SGMGH Sigma II servomotor.

Cable Description (C)		Motor Size (kW)	Part Number*		Comments	Item Class
			without Brake	with Brake		
Power Cable with Connectors IP67		0.5, 0.9, 1.3	B1CE-□□(A)	B1BCE-□□(A)	Use the following key to specify needed cable length (last two digits of the part number): 03: 3m 05: 5m 10: 10m (standard) 15: 15m 20: 20m	Limited Stock
		2.0, 3.0	B2CE-□□(A)	B3BCE-□□(A)		
		4.4	B3CE-□□(A)			
		5.5, 7.5	B5CE-□□(A)	B5CE-□□(A) B7BCE-□□(A)		
		11, 15	B6CE-□□(A)	B6CE-□□(A) B7BCE-□□(A)		

* "(A)" at the end of the cable number is the revision level, which may be changed prior to this catalog's reprinting.

CE Connector Selection

Use the table below to select mating connectors for your SGMGH Sigma II servomotor.

Connector Description (D)		Motor Size (kW)	Part Number		Comments**	Item Class
			without Brake	with Brake		
Connector for Motor Power Cable*		0.5, 0.9, 1.3	CE05-8A18-10SD-B-BAS CE3057-10A-1(D265)	CE05-8A20-15SD-B-BAS CE3057-12A-1(D265)	L-type connector Cable clamp	Limited Stock
		2.0, 3.0, 4.4	CE05-8A22-22SD-B-BAS CE3057-12A-1(D265)	CE05-8A24-10SD-B-BAS CE3057-16A-1(D265)	L-type connector Cable clamp	
		5.5, 7.5, 11, 15	CE05-8A32-17SD-B-BAS or CE05-6A32-17SD-B-BSS and CE3057-20A-1		L-type connector or Straight-type connector and Cable clamp (diameters 0.866 to 0.937in)	
Connector for Holding Brake		All	CE05-8A10SL-3SC-B-BAS and CE3057-4A-1 (D265)		L-type connector for holding brake and Cable clamp (diameters 0.142 to 0.220in)	
Connector for Encoder Cable (incremental or absolute encoder)			CE02-6A20-29NSW and CE20BA-S and CE3057-12A-3(D265)		L-type connector (plug and back shell) and Cable clamp (diameters 0.265 to 0.394in)	

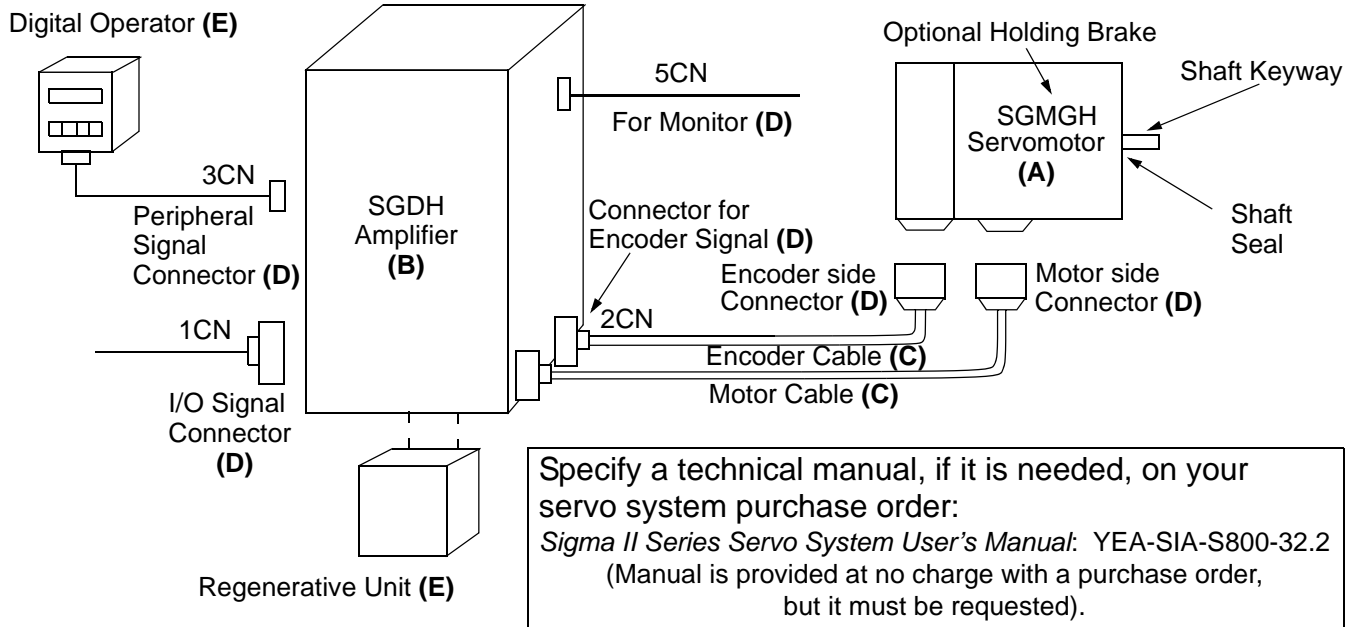
* Choose the connector and the associated cable clamp for a complete assembly. Connectors listed in this table are environmentally sealed.
** Connectors are manufactured by DDK and listed here with the largest standard cable clamp available.

Selecting Your SGMGH Sigma II Servo System

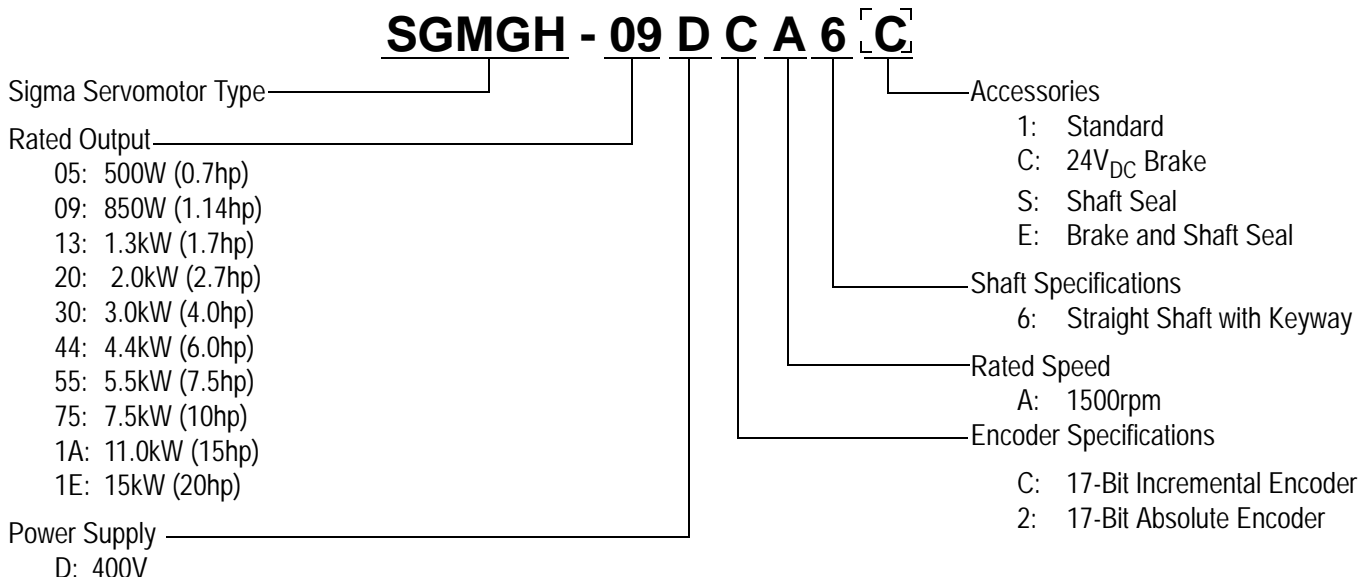
First, select the Sigma II servomotor suited for your application using SigmaSize: the Yaskawa servomotor sizing software, available at no charge. (Request SigmaSize software via e-mail, at: literature@yaskawa.com).

Use the diagram below to locate and identify the components of your system. Each item is letter-coded and cross-referenced in the option tables on the following pages.

System Configuration



Model Number Designation



Servomotor & Amplifier Selection

SGMGH
Servomotors

Use the table below to select the appropriate SGMGH Sigma II servomotor and amplifier.

(Refer to the motor model # designation on the previous page specifying the available modification to motor construction/features.)

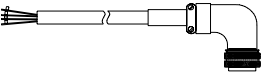
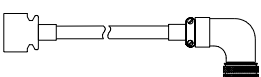
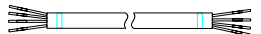
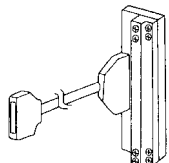
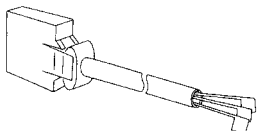
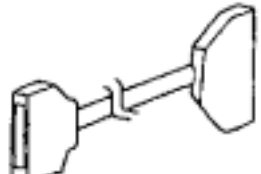
Description	Peak Torque (in • lb)	Rated Torque (in • lb)	Motor Inertia (in • lb • s ² x 10 ⁻³)	Motor MODEL Number (A)	Amplifier MODEL # (B)* Analog/Digital Input SGDH-	Motor and Amplifier Item Class
400V Three-Phase 17-bit Incremental Encoder Straight Shaft with Keyway 3000rpm maximum** MS Connectors	79	25	6.41	SGMGH-05DCA61	05DE	Stock
			8.26	SGMGH-05DCA6C		
	122	48	12.30	SGMGH-09DCA61	10DE	
			14.15	SGMGH-09DCA6C		
	207	74	18.2	SGMGH-13DCA61	15DE	
			20.1	SGMGH-13DCA6C		
	254	102	28.1	SGMGH-20DCA61	20DE	
			35.9	SGMGH-20DCA6C		
	404	165	40.7	SGMGH-30DCA61	30DE	
			48.5	SGMGH-30DCA6C		
	630	252	59.8	SGMGH-44DCA61	50DE	
			67.6	SGMGH-44DCA6C		
	776	310	78.8	SGMGH-55DCA61	60DE Requires Regenerative Unit (E)	
			86.6	SGMGH-55DCA6C		
	1050	425	111	SGMGH-75DCA61	75DE Requires Regenerative Unit (E)	
			119	SGMGH-75DCA6C		
	1550	620	249	SGMGH-1ADCA61	1ADE Requires Regenerative Unit (E)	Limited Stock
			267	SGMGH-1ADCA6C		
1988	845	279	SGMGH-1EDCA61	1EDE Requires Regenerative Unit (E)	Stock	
		309	SGMGH-1EDCA6C		Limited Stock	

Note: 24V_{DC} brakes for SGMGH Sigma II servomotors are standard. Contact a local source for 24V_{DC} power supplies.
For technical information, request Yaskawa manual number YEA-SIA-S800-32.2.

**2000rpm maximum for 11 and 15kW systems only.

Pre-wired Cable Selection

Use the table below to select pre-wired cables for your SGMGH Sigma II servomotor.

Cable Description (C)		Motor Size (kW)	Part Number*	Comments	Item Class
Power Cable with Connectors (IP67)		0.5, 0.9, 1.3	BAE-□□(A)	Use the following key to specify needed cable length (last two digits of the part number): 03: 3m 05: 5m 10: 10m (standard) 15: 15m 20: 20m	Stock**
		2.0, 3.0, 4.4	BBE-□□(A)		
		5.5, 7.5, 11	BDE-□□(A)		
		15	B5E-□□(A)		
Power Cable for Holding Brake (IP67)			B7BCE-□□(A)		
Encoder Cable (incremental or absolute) (IP67)		All	JZSP-CMP02-□□(B)	These cables are available in five lengths. Use two digits in the part number's last place: 03: 3m 05: 5m 10: 10m (standard) 15: 15m 20: 20m	
Encoder Cable (for applications up to 20m) Only for Solder Connections			FR-RMCT-SB	These cables are available in any length. For example, to order one FR-RMCT-SB cable, 16m long, specify: quantity: 16 part no.: FR-RMCT-SB	
Encoder Cable (for applications from >20 to <50m) Only for Solder Connections			UL20276-SB		
Input/Output 1CN Cable & Transition Terminal lock			JUSP-TA50P	35 mm DIN rail mountable; the cable length is 0.5m.	
Input/Output 1CN Cable with Pigtail Leads			JZSP-CKI01-□(A)	Use the following key to specify needed cable length (last digit of part number): 1: 1m (standard) 2: 2m 3: 3m	
Input/Output 1CN Cable Cable with Female D-Sub output Connector***			JZSP-CKI0D-□□	Use the following key to specify required cable length (last two digits of the part number): D50: 0.5m 01: 1m (standard) 02: 2m 03: 3m	

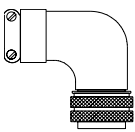
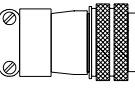


* (A)" at the end of the cable number is the revision level. The revision level may be changed prior to this catalog's reprinting.

** Standard cable lengths are Stock items; non-standard cable lengths are Limited Stock items.

*** 50 Pin Female D-Sub output connector mates to customer supplied third party terminal block. (e.g., Wago #289-449, Weidmuller #919658, Phoenix #2283647, Amphenol/Sine #20-51039, and many others).

Connector Selection

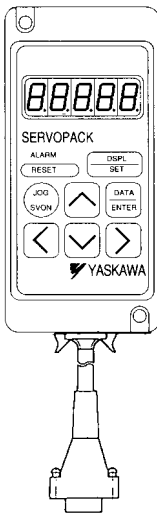
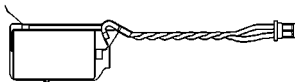
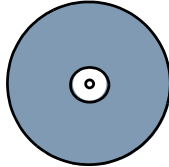
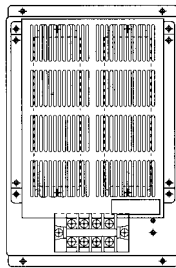
Use the table below to select mating connectors for each SGMGH Sigma II servomotor.

Connector Description (D)		Motor Size (kW)	Part Number	Comments	Item Class
MS Connector for Motor Power Cable*		0.5, 0.9, 1.3	MS3106B18-10S	Straight-type connector	Stock
			MS3108B18-10S	L-type connector	
			MS3057-10A	Cable clamp	
		2.0, 3.0, 4.4	MS3106B22-22S	Straight-type connector	
			MS3108B22-22S	L-type connector	
			MS3057-12A	Cable clamp	
		5.5, 7.5, 11, 15	MS3106B32-17S	Straight-type connector	
			MS3108B32-17S	L-type connector	
			MS3057-20A	Cable clamp	
MS Connector for Brake Power Cable		All	MS3108A10SL-3S MS3057-4A	L-type connector Cable clamp	
MS Connector for Encoder Cable (incremental or absolute encoder)			MS3106B20-29S	Straight-type connector	
			MS3108B20-29S	L-type connector	
			MS3057-12A	Cable clamp	
1CN Mating Connector				JZSP-CKI9	
2CN Encoder Mating Connector			JZSP-CMP9-1	—	
3CN Peripheral Mating Connector	—		YSC-1	—	
5CN Connector and 1m Cable with Pig-tails	—		DE9404559	Can use 5CN for analog speed and torque monitor service checks.	

* Choose either a straight or L-type connector and the associated cable clamp for a complete assembly. For example, L-type connector MS3108B18-10S is compatible with cable clamp MS3057-10A. MS connectors listed in the table are non-environmental.

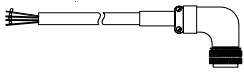
Peripheral Device Selection

Use the table below to select peripheral devices for each SGMGH Sigma II servomotor.

Component (E)		Part Number	Description	Item Class
Hand-held Digital Operator Panel		JUSP-OP02A-1 and JZSP-CMS00-1	Portable unit with 1m adapter cable for Sigma II	Stock
Software Interface Cable	—	YS-12	Pre-wired 2.0m cable with 9-pin connector	
Absolute Encoder Battery		JZSP-BA01	3.6V, 1000mAh (Lithium Battery)	
		JZSP-BA01-1	For SGD-60 and above (same as JZSP-BA01 with longer lead)	
SigmaWin+ Software		JZSP-WP0001	Minimum Recommended System Requirements Pentium 200 MHz, 64MB RAM, 200MB hard drive, CDROM Drive, RS-232 or RS-422 port, Screen resolution 800x600 w/ 256 colors, and Windows 95,98,NT4.0,2000,ME. (Windows XP planned)	
Regenerative Unit (880W) for 6.0 and 7.5kW amplifier		JUSP-RA18	These are general purpose regenerative units.	
Regenerative Unit (1760W) for 11 and 15kW amplifiers		JUSP-RA19	Order the Motion document: PI#99004 for setup instructions for this unit. Caution: Proper set-up is necessary to avoid equipment damage.	
DC Reactor (for suppressing harmonics in the power supply)	For 400V: SGD-05DE	X5074	—	Limited Stock
	For 400V: SGD-10DE SGD-15DE	X5075		
	For 400V: SGD-20DE SGD-30DE	X5076		
	For 400V: SGD-50DE	X5077		
	Larger capacity amplifiers	Check factory for availability.		—

CE Pre-wired Cable Selection

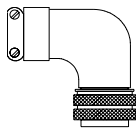
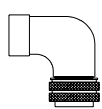
Use the table below to select shielded pre-wired power cables for your SGMGH Sigma II servomotor.

Cable Description (C)		Motor Size (kW)	Part Number*	Comments	Item Class
Power Cable with Connectors (IP67)		0.5, 0.9, 1.3	BACE-□□(A)	Use the following key to specify needed cable length (last two digits of the part number): 03: 3m 05: 5m 10: 10m (standard) 15: 15m 20: 20m	Limited Stock
		2.0, 3.0, 4.4	BBCE-□□(A)		
		5.5, 7.5, 11	BDCE-□□(A)		
		15	B5CE-□□(A)		—
Power Cable for Holding Brake (IP67)		All	B7BCE-□□(A)		Limited Stock

* The "(A)" at the end of the cable number indicates the revision level. The revision level may be subject to change prior to this catalog's reprinting.

CE Connector Selection

Use the table below to select mating connectors for your SGMGH Sigma II servomotor.

Connector Description (D)		Motor Size (kW)	Part Number	Comments**	Item Class
Connector for Motor Power Cable*		0.5, 0.9, 1.3	CE05-8A18-10SD-B-BAS CE3057-10A-1(D265)	L-type connector Cable clamp (for diameters 0.413 to 0.555in)	Limited Stock
		2.0, 3.0, 4.4	CE05-8A22-22SD-B-BAS CE3057-12A-1(D265)	L-type connector Cable clamp (for diameters 0.492 to 0.630in)	
		5.5, 7.5, 11, 15	CE05-8A32-17SD-B-BAS or CE05-6A32-17SD-B-BSS CE3057-20A-1	L-type connector or Straight-type connector Cable clamp (for diameters 0.866 to 0.937in)	
Connector for Holding Brake		All	CE05-8A10SL-3SC-B-BAS and CE3057-4A-1 (D265)	L-type connector for holding brake and Cable clamp (for diameters 0.142 to 0.220in)	
Connector for Encoder Cable (incremental or absolute encoder)			CE02-6A20-29NSW and CE20BA-S or CE3057-12A-3(D265)	L-type connector (plug and back shell) or Cable clamp (for diameters 0.265 to 0.394in)	

* Choose the connector and the associated cable clamp for a complete assembly. The connectors listed in the table are suitable for IP67 environments.

** Connectors are manufactured by DDK and listed here with the largest standard cable clamp available.